UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WISCONSIN

MARINE TRAVELIFT, INC.,

Plaintiff,

v. Case No. 14-C-443

ASCOM SpA, and
INTERNATIONAL BOATLIFT EXCHANGE, INC.

Defendants.

DECISION AND ORDER

On August 25, 2014, this court denied the Plaintiff's motion for a preliminary injunction to enjoin the Defendants ("ASCOM") from selling gantry cranes alleged to infringe on a number of patents owned by the Plaintiff. In so ruling, I found serious questions of validity and found no showing of irreparable harm. Following discovery, the Defendants have filed a motion seeking summary judgment on invalidity and non-infringement. Given the length of the Defendants' reply brief and the potential that it unfairly prejudiced the Plaintiff by raising new arguments, a sur-reply brief was allowed. The matter is now fully briefed. For the reasons given below, the motion for summary judgment will be granted in part, and denied in part.

I. Background

As described in more detail in this court's August 25, 2014 ruling, the parties are in the business of building gantry cranes designed for a number of commercial applications, including the lifting and moving of large boats around a shipyard. MTI owns a number of patents disclosing features of gantry crane steering systems that allow a crane to rotate around its own axis, in what the parties refer to as carousel or circle steering. The feature is desirable in that it allows a large and bulky gantry crane to maneuver around a ship yard more easily.

But MTI's patents do not disclose the concept of carousel steering itself, which had already been present in the prior art. Instead, the patents describe a carousel steering system that allows the wheels to reach their desired position by having two of the wheels rotate counterclockwise and then reversing the drive direction of those wheels. "The steering system is configured to cause the first front wheel and the second rear wheel to rotate counterclockwise to move into position for a selected carousel steering mode, and to cause the second front wheel and the first rear wheel to rotate clockwise to move into position for the carousel steering mode. The system then reverses the drive direction of the second front wheel and the second rear wheel." (ECF No. 98-1 at 3:3-9.) This feature was intended to address a problem in existing gantry cranes, whereby two of the wheels would need to be rotated 90 degrees or more further than the other wheels. That is, if all the wheels maintained the same forward-drive, then they could not spin in a circle until two of the wheels had traversed about 134 degrees. (*Id.* at 10:25-60.) By reversing the drive in two wheels, the patented invention allows for a "shortcut" for two of the wheels.

The asserted claims also disclose features involving safety, such as stopping movement of the crane if the wheels are out of position, and monitoring wheel position and other factors through use of a controller. I address these features in more detail below.

II. Analysis

The Defendants argue that most of the asserted claims are anticipated by prior art. "Anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim." *Connell v. Sears, Roebuck & Co.,* 722 F.2d 1542, 1548 (Fed.Cir. 1983). "[U]nless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102." *Net MoneyIN, Inc. v. VeriSign, Inc.,* 545 F.3d 1359, 1371

(Fed. Cir. 2008).

A. Mi-Jack Prior Art

A centerpiece of the Defendants' invalidity defense is a crane made by a company called Mi-Jack Products, which was sold to the Huntsville Airport in Alabama in 2002. A few years earlier, airport officials retained the services of Joe Cadile, of Crane Services, Inc., a mechanical and design engineering firm, to assist the airport in designing and acquiring a gantry crane to operate at the airport. With input from airport officials, Cadile drew up specifications to suit their needs, the end result of which was an eight-wheeled gantry crane having the ability to turn in a circle, the so-called "carousel" feature at issue in this case. The winning bid came from Mi-Jack, which ultimately produced a crane it called the 850P model.

According to ASCOM, the Mi-Jack 850P crane meets all the limitations of the claims at issue here. The machine comprises a frame structure with wheels proximate the various sides of the structure; a lifting apparatus; a user interface; and a controller capable of reversing the drive direction and rotating all the wheels either clockwise or counterclockwise. All of these features allowed the 850P to perform the key novelty of the Plaintiff's invention, which is the ability to rotate in a carousel fashion by having two of the wheels reverse direction. In addition, the 850P incorporates hydraulic drive motors on two of the four corners of the machine, and its controller was configured to slow down the machine's movement before carousel steering mode could be initiated (to prevent damage). These are the central elements of the claims of the '362 patent, which means (if ASCOM is right) that the 850P anticipated those claims by several years.

1. Expert Testimony

MTI first argues that much of the evidence about the Mi-Jack 850P comes by way of improper expert testimony from Joe Cadile and Jeffrey Tiller, a Mi-Jack subcontractor who programmed the controller of the 850P. Neither witness was disclosed as an expert and neither

provided an expert report, as required by Fed. R. Civ. P. 26. MTI argues that much of their testimony is opinion evidence of the sort normally offered by experts, because their opinions involve engineering issues regarding the design of the Mi-Jack crane. For example, Tiller opined in a declaration that controllers of gantry cranes must prevent the operator from driving the crane before the wheels were in the correct position, or else it could cause undue stress on the crane. (ECF No. 154 at ¶ 11.) Tiller, by his own admission, is not a mechanical engineer, and so MTI argues he should not be heard to give opinions about how gantry cranes might be damaged. Cadile, who created the specifications for the 850P on behalf of the Huntsville Airport, opined that "you have got to reverse the drive direction" to make a circle with the crane, and before entering carousel mode you must make sure the drive wheels come to a stop so as to avoid "structurally tearing things up." (ECF No. 152-6 at 85:7-8 and 67:17-23.) Cadile's opinions, MTI believes, stray too far into matters that are technical, and thus he should have been disclosed as an expert and a report should have been filed.

The line between expert and lay testimony can be difficult to judge, and in fact many kinds of opinions—for example, the opinion of a treating physician— will exhibit features of both lay and expert evidence. Here, neither witness is offering abstract testimony about scientific or technical matters that they have been retained to study. The testimony they have given is based on their own pre-existing experience designing and working on the very machine that is at issue here. Even if Tiller is not an engineer, he is not forbidden from explaining the reason for a feature of the program that drives the machine. Someone who installed brakes on a car could testify that their purpose was to stop the car and prevent accidents even if the installer was not an expert in physics or mechanical engineering. Moreover, there does not appear to be any reason to dispute the *reason* the 850P's controller was programmed the way it was. In an anticipation analysis, it does not much matter *why* something was the programmed the way it was. The question is simply whether the feature existed

and performed the same function.

Similarly, although Cadile's opinions naturally reflect his experience working on cranes in general, the complained-of statements were really testimony about the 850P crane in particular. When discussing reversing the drive direction, for example, he was not offering some kind of expert testimony about technology he was asked to review for this litigation, but instead was describing how the 850P machine actually was designed, which was a process in which he personally played a role. (ECF No. 152-6 at 84-85.) The 850P, he said, reversed the drive and also required the wheels to come to a stop before going into carousel steering mode. This line of testimony is much more akin to percipient fact witness testimony than it is to expert testimony. Accordingly, I conclude the testimony is admissible, at least to the extent that it simply recounts their own activities in the design of the 850P, their personal observations of how the 850P operated and performed, and their recollection of when these activities and observations occurred.

2. Expert Testimony and Corroboration of Carousel Steering

Joe Cadile was asked in his deposition, "if you want to turn in a circular manner with this machine back in June of 2002 . . . what, if anything, did you have to do with the drive direction of the wheels?" (ECF No. 152-6 at 84:16-17.) He answered, "Oh, they're reversed." (*Id.* at 84:21.) He explained further:

> In the program logic, as you know, is [sic] we flip the circle steer. The program logic in the PLC [programmable logic controller] says, once I've made my position, the 12 ½ degrees, okay, then I am changing the hydraulic flow to the drive motors. Okay. Still the same hydraulic pressure. So on what I call the F1, that's going to be driving one direction, and the F2 . . . in the rear, it will start to drive in the other direction. . . . I mean, to make a circle, you have got to reverse the drive direction.

(*Id.* at 84:23 - 85:8.)

In other words, according to Cadile, the Mi-Jack crane not only had the carousel steering feature in 2002, it achieved that function by reversing the drive direction of the wheels. In addition,

Cadile testified that the machine had to be in "stop position until we achieve circle steer" or else "the angles would be wrong and you'd start structurally tearing things up" due to "overstressing." (*Id.* at 85-86.) Mi-Jack engineering vice-president Daniel Zakula also testified to the same effect. When circle steering mode is engaged by the user, "the drive direction on one of the drive wheels has to be reversed so that when the machine does begin to drive, it rotates . . . in the correct direction to perform the drive function." (ECF No. 236-1 at 45:12-19.) This happens automatically: "When he selects the circle mode and presses the actuator button, the wheels will begin to transition from their current mode to the circle mode. And once they get to their circle mode, everything is in the circle mode." (*Id.* at 43:8-12.) In short, if credited, this testimony would demonstrate that the Mi-Jack machine possessed certain of the key attributes of the asserted claims of the '362 patent.

MTI argues that the testimony is not sufficiently corroborated to justify entry of judgment in ASCOM's favor. MTI argues that even if the 850P crane *currently* has the functionality described above, at issue in this case is whether it possessed those features the crane had in 2002, when it was delivered to the Huntsville airport. Specifically, MTI argues that the oral testimony of Cadile and Tiller is not enough to substantiate ASCOM's allegations that the crane possessed the ability to achieve carousel mode by reversing the drive direction of the wheels when it was first placed in use. Absent any corroboration, their testimony does not suffice, particularly because Cadile is being paid for his testimony and because both witnesses "can be expected to derive a sense of professional or personnel [sic] accomplishment in being the first in the field," which makes the witnesses biased. *Finnigan Corp. v. Int'l Trade Comm'n,* 180 F.3d 1354, 1368 (Fed. Cir. 1999).

"[C]orroboration is required of any witness whose testimony alone is asserted to invalidate a patent, regardless of his or her level of interest." *Id.* at 1369; *Sandt Tech., Ltd. v. Resco Metal & Plastics Corp.,* 264 F.3d 1344, 1351 (Fed. Cir. 2001) (discussing indicia of reliability for

corroboration). The Federal Circuit has looked with "disfavor" on attempts to show anticipation with only oral testimony. *Juicy Whip v. Orange Bang,* 292 F.3d 728, 740 (Fed. Cir. 2002).

ASCOM responds that it is not relying solely on oral testimony and cites what it describes as ample written corroboration. For example, there is a great deal of paperwork, including invoices, manuals, specifications, regarding the development and delivery of the crane in 2002. Although MTI does not dispute that the crane was operational in 2002, it disputes the fact that the crane, in 2002, had the feature of carousel steering through reversing the wheel drive—the key teaching of MTI's patent. Instead, MTI argues that the crane did not have this feature until around the year 2006, when the crane was updated with an expensive GPS-drive system. For support, it notes that preliminary schematics from 2001 do not contain circle steer components, and some of the hydraulic schematics were not approved until 2007.

ASCOM has produced a drawing of the user interface—a "control box" for operating the crane—which shows a steering selector knob with settings for 0 degrees (front-rear drive), 90 degrees (sideways, or transverse drive), and "circle" steering. The drawing is marked "Copyright 2002 Mi-Jack Products, Inc." (ECF No. 187-3 at 18.) The same rendering shows an indicator light marked "Wheels Ready," which activates only when the wheels are in the correct position. These features are explained in a contemporaneous Mi-Jack user manual, which explains that the steering mode selector switch "is used to select the desired steering mode. . . . 'CIRCLE' position is used to allow the machine to rotate about its center." (*Id.* at 25.) There are also a number of schematics from 2002 depicting a "hydraulic gantry w/ circle steer." (*Id.* at 63.) Finally, Joseph Cadile has submitted punch lists from June 2002 that indicate "circle steer is now functional." (ECF No. 183-2 at 2.)

That the crane had the circle steering function upon delivery in 2002 (or immediately after) seems beyond question. Cadile, who was intimately involved in the project, testified that it did, and

states that he personally witnessed it operating in carousel mode in 2002. (ECF No. 183, ¶ 3.) Zakula echoed that testimony. The manual, schematics, control interface, and punch lists all point to the existence of a gantry crane with circular steering function operable in 2002.

MTI's arguments to the contrary are all based essentially in speculation. As noted earlier, its primary argument is founded on the fact that the crane received a "GPS" upgrade in 2006. MTI notes that the upgrade cost some $200,000, which it views as suspiciously expensive—evidence that the GPS addition was not a minor one but must have included a substantial overhaul of the steering system to include circle steering. MTI's speculation aside, there is no reason to believe that Mi-Jack added circle steering in 2006. First of all, there is nothing about the addition of a GPS-based feature that would lead one to imagine that such a feature would have anything to do with rotational steering. Global positioning systems by their very nature involve a longitude-latitude framework for establishing the location of something. If a machine is operating in a circular mode (i.e., around its own axis), then its coordinates will stay the same and the machine's position with respect to longitude and latitude will not change at all. GPS, in short, does not have much to do with circular steering, and so in the abstract one would not expect circle steering to be part of a GPS-related upgrade.

Second, MTI cites no documentary evidence nor any testimony suggesting that circular steering was added to the crane in 2006 rather than 2002. Its argument stands in contrast to the documents cited above, as well as Cadile's testimony, which indicates that the crane did have such a function in 2002 and that the GPS unit added in 2006 had "nothing whatsoever to do with 'circle steer,'" (ECF No. 183, ¶ 6.) Daniel Zakula echoed that conclusion, explaining that GPS steering is a feature "only for tracking the machine up and down straight lines." (ECF No. 236-1 at 52:5-6.) Asked point-blank whether the GPS steering system had anything to do with circle steering, he replied, "no." (*Id.* at 52:3.) And, as Bruce Farber has explained, the 2006 schematics relating to

the GPS feature show no modifications to the steering functions, nor to the hydraulic system, which means "nothing was modified on the 850 P with respect to the steering modes that were originally installed on the machine in 2002." (ECF No. 188 at ¶ 11.) MTI's argument is thus contradicted at every step, by testimony of disinterested parties as well as by documentary evidence.

MTI's fallback argument is that even if the Mi-Jack crane did have circular steering in 2002, that does not mean it was same kind of steering as the patented technology. There are a number of different ways to achieve circular or carousel steering, it notes, and it is just as likely that the Mi-Jack machine used some other method to achieve that mode. But again, this is simply speculation. As described above, Cadile and Zakula testified that carousel mode was achieved by reversing the wheel direction, just as in the asserted claims. This testimony is supported by the 2014 video Cadile filmed, which clearly shows that functionality—each wheel turning only 22 or 23 degrees, rather than turning much more. (ECF No. 152-8.) The mere fact that the crane happened to receive an unrelated upgrade in 2006 is not enough to overcome the testimony and documentary evidence that the crane possessed the relevant features in 2002.

In a related vein, MTI suggests that some of the documents produced by Mi-Jack, such as the user manual dated October 2002, were not related to the 850P crane sold to the Huntsville airport. But again, this is purely speculative. The user manual discussed above, which describes the circle steering mode, is titled "Operator's Manual . . . Travelift Crane 850P," which is the same model of crane delivered to Huntsville, and is dated contemporaneously with the in-service date of that machine. Mi-Jack engineer Myron Glickman authenticated the document, and indicated that it was the correct manual. (ECF No. 152-4 at 49-50.)

3. Controller

It is clear, then, that the Mi-Jack crane possessed circle steering, including the kind of circle steering taught by the asserted claims, which involves reversing the drive direction of some of the

wheels. Even if that is true, MTI argues, ASCOM has not shown that the machine possessed a "controller" configured to reverse drive direction, as taught in several of the claims of the '362 patent. That is, even if the Mi-Jack crane had the theoretical mechanical ability to carry out carousel steering, ASCOM has not shown that it actually carried out that function through a controller.

MTI's argument is not convincing. At the outset, I note that MTI's argument does not suggest any reason why a machine would possess a mechanical ability to function a certain way but lack a means for a user to get it to function that way. In short, why would Mi-Jack have created a crane with circle steering functionality but then not create any way for a user to control the machine to effectuate that function? Of course it is theoretically possible that a machine would have more abilities than are reflected in its control units, but one expects that is the exception rather than the rule. More importantly, there is the testimony of Joseph Cadile, who stated quite clearly that he had witnessed the machine operating in circle steering mode in 2002, and that the function, which is described in the manual and schematics, was part of the crane's original design. The punch list indicated in June 2002 that "circle steer is now functional." (ECF No. 183-2 at 2.) It is not simply that the crane had the mechanical or theoretical *ability* to function in circle steering mode, then—the crane actually *did* function in that mode when the user selected the right setting on the selector switch, which is one of the "controls" described in the manual. This is shown in the hydraulic schematic dating to 2002, wherein a "circle steer valve solenoid" operates to reverse the wheel drive direction. (ECF No. 187-3 at 41.) Finally, Daniel Zakula testified that the 850P had a programmable logic controller (PLC), which was purchased from a company called Rexroth. The PLC communicates with a steer controller to activate steering valves to drive each wheel to its position. (ECF No. 236-1 at 46-47.) Ultimately, MTI has not suggested any way that a crane with circle steering functionality could function that way *without* having a "controller," and the contemporary evidence and corroborated testimony demonstrate that the Mi-Jack crane did possess

one.

In a final effort, MTI suggests that even if there was a controller, it did not necessarily perform the function of slowing down and stopping movement before the crane enters carousel mode, a limitation disclosed in several asserted claims apparently designed to prevent damage to the crane. For example, claim 6 of the '362 patent indicates that the "controller is programmed to slow down movement of the frame structure before effecting the carousel steering mode." (ECF No. 98-1 at 12:12-14.) The specification explains: "One safety feature is invoked when a new steering mode is selected by the operator. In this instance, the prior mode running at the time of the new selection will not change until the control system determines it is safe to change steering modes. This helps prevent damage to the crane or items attached to or carried by the crane, or an inadvertent change to the steering mode." (*Id.* at 9:6-12.) In addition, the specification further explains: "the control system will not allow a change to certain steering modes unless the crane is stopped. Specifically, in the case of changing to the carousel steering mode, the control system will not allow the new steering mode until the crane is stopped." (*Id.* at 9:18-23.)

MTI argues that there is no evidence that the controller is programmed to slow down or stop the machine before effectuating carousel steering mode. That is not true. Cadile testified, for example, that the Mi-Jack machine had to be in a stopped position or else "the processor won't let the crane move." (ECF No. 152-6 at 67-68.) In other words, it was part of the programmed operation that the crane must be in a stopped position "before effecting the carousel steering mode," as the asserted claims teach. Similarly, Daniel Zakula testified quite clearly that the controller automatically prevented the user from switching modes while the crane was in motion. "The operator cannot cause the machine to go from one mode to another mode while it is in motion . . . Because the control code in the MDC [controller] is designed such that the machine has to be stopped before it will allow the transition." (ECF No. 236-1 at 63.) Their testimony is corroborated

by the video of the Mi-Jack 850P in action. In short, the Mi-Jack crane had, as part of its programmed functionality, a feature requiring that the crane had to be stopped before carousel mode could be activated.

4. Public Use

A person is not entitled to a patent if the invention disclosed therein was in public use in this country more than one year before the application date for the patent. 35 U.S.C. § 102(b). The statutory phrase "public use" does not necessarily mean open and visible in the ordinary sense; it includes any use of the claimed invention by a person other than the inventor who is under no limitation, restriction, or obligation of secrecy to the inventor. *New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.,* 298 F.3d 1290, 1297 (Fed. Cir. 2002). MTI argues that the Mi-Jack crane was not a "public" use because it was a one-off custom product that operated in non-public areas of an airport.

> Public use includes "any use of [the claimed] invention by a person other than the inventor who is under no limitation, restriction or obligation of secrecy to the inventor." "The public use bar serves the policies of the patent system, for it encourages prompt filing of patent applications after inventions have been completed and publicly used, and sets an outer limit to the term of exclusivity."

Netscape Commc'ns Corp. v. Konrad, 295 F.3d 1315, 1320 (Fed. Cir. 2002) (citations omitted).

"[W]hen an asserted prior use is not that of the applicant, § 102(b) is not a bar when that prior use or knowledge is not available to the public." *Woodland Trust v. Flowertree Nursery, Inc.,* 148 F.3d 1368, 1371 (Fed. Cir. 1998). That is, if a third party uses the invention in a manner that prevents the public from accessing it, the use might not be considered public. In *W.L. Gore & Associates, Inc. v. Garlock, Inc.,* for example, the court found no public use when the claimed invention was used by third parties pursuant to a confidentiality agreement. 721 F.2d 1540, 1550 (Fed. Cir. 1983) ("It was error to hold that Budd's activity with the Cropper machine . . . was a 'public' use of the processes claimed in the '566 patent, that activity having been secret, not

public.") And in *Baxter Int'l, Inc. v. COBE Labs., Inc.,* the court did find a public use due largely to the lack of confidentiality surrounding the technology. 88 F.3d 1054, 1059 (Fed. Cir. 1996) ("Suaudeau's lack of effort to maintain the centrifuge as confidential coupled with the free flow into his laboratory of people . . . who observed the centrifuge in operation and who were under no duty of confidentiality supports only one conclusion: that the centrifuge was in public use.") The court went on to find that, "[a]s between a prior inventor who benefits from a process by selling its product but suppresses, conceals, or otherwise keeps the process from the public, and a later inventor who promptly files a patent application from which the public will gain a disclosure of the process, the law favors the latter." *Id.*

MTI argues that the use here cannot be a public one because it occurred in restricted areas of an airport, a facility surrounded by fences. But the cases do not make the public/private distinction simply by reference to whether an invention was out in the open. One reason is that some inventions are, by their nature, devices or processes that are out of sight *by design*. Nanotechnology, for example, could be all but invisible to the public, but that does not mean the entire field of nanotechnology is rendered "non-public" for purposes of patent law. The question of public versus private turns not on the physical characteristics of the use (under ground, hidden inside a computer, etc.) but on whether the use is theoretically available to the public, and that question depends largely on the degree of confidentiality surrounding the use. *Dey, L.P. v. Sunovion Pharm., Inc.,* 715 F.3d 1351, 1355 (Fed. Cir. 2013). Accordingly, the mere fact that the alleged public use took place in restricted areas of an airport does not mean the use was non-public.

The question, then, is whether Mi-Jack or the Huntsville Airport took steps to keep the invention confidential, not merely whether the entire crane was kept out of public sight due to the fact that it was used at an airport. *Id.* ("we have applied section 102(b) to invalidate a patent based on third-party use when the third party 'made no attempt to maintain confidentiality or to

deliberately evade disclosure,' made no 'discernible effort to maintain the [invention] as confidential,' or 'made no efforts to conceal the device or keep anything about it secret.'" (citations omitted)).

To support its public use defense, ASCOM notes that the Port of Huntsville—a public entity—owns the facility where the crane is operated. The crane is operated near a public roadway adjacent to the airport, where passers-by can view the crane. The crane itself is heavily used by numerous employees, none of whom are under any obligation of confidentiality. In fact, the airport's gantry cranes were the subject of a 2004 story in the Huntsville *Times,* which included an interview with one of the crane's operators. (Huntsville *Times,* "Equipment Operator Enjoys Being Outdoors," Feb. 8, 2004. (ECF No. 189-2.))

It is true, as MTI argues, that a member of the public could not simply "walk up and inspect the crane" or view the crane from the adjacent road and discern what kind of drive features the crane possessed. (ECF No. 176-1 at 28.) But once again, such could be said of countless uses of inventions that nevertheless count as "public" use. Many, or most, inventions are commercialized in private companies, or on private property, and most companies do not allow members of the public to roam around their businesses "inspecting" equipment. *New Railhead,* 298 F.3d at 1299 ("[W]hether the use of an invention is public or private does not necessarily depend upon the number of persons to whom its use is known." (quoting *Egbert v. Lippmann*, 104 U.S. 333, 336 (1881)). The point is not whether random members of the public can view an invention, it is whether the invention is generally out in open, or whether the owner made deliberate efforts to maintain its secrecy—some effort that would make the invention's existence more confidential than any other of the countless technologies and products used in the normal course of business. Here, the crane was used by employees, who even discussed it in the newspaper, and there is no evidence that the airport made any effort to keep the crane or its features a secret.

Importantly, MTI does not explain why one would expect secrecy in such a situation. The airport authority did not invent the technology, and it had no natural reason to keep it confidential. And recall that the crane is at an airport, a quasi-public entity with something of a monopoly on airport services in its area. Unlike most businesses, it presumably has less of a need for confidentiality because it is not the kind of entity that is in stiff competition with competitors. In sum, without any evidence of efforts to keep the crane confidential, and without any plausible reason for confidentiality, I am satisfied that ASCOM has shown that neither Mi-Jack nor the third-party user made any effort to conceal the device, and so it qualifies as a public use. *Dey,* 715 F.3d at 1355.[1]

In sum, MTI's challenges to ASCOM's contention that the Mi-Jack 850P constitutes prior art rest more on speculation than evidence. MTI argues that a machine that clearly possessed a certain functionality in 2014 did not have that function in 2002, when it was placed into service. It argues that even if the machine had a theoretical mechanical ability to function a certain way, it did not have a controller allowing it to do so. It argues that manuals and schematics describing a gantry crane called an 850P and dated 2002 are not the right documents, despite the fact that the crane at issue is an 850P and was built and delivered in 2002. Finally, it argues that an upgrade adding a GPS-steering feature must have been the means that the crane acquired the functionality it now clearly possesses, despite no relationship between that feature and carousel steering. None of these arguments are founded in fact, and none are sufficient to overcome the evidence ASCOM has presented to establish that the Mi-Jack 850P operates today in essentially the same way it operated when delivered to the Huntsville Airport in 2002. I therefore conclude that the Defendants

[1]MTI also cites the fact that Cadile had to sign a confidentiality agreement with Mi-Jack in order to see the drawings, but any confidentiality imposed during the design phase is irrelevant if the machine and the allegedly anticipatory technology became a public use at some later date, as it did here.

are entitled to summary judgment that the Mi-Jack 850P anticipates the relevant asserted claims. Unfortunately, the Defendants' submissions lack the clarity needed to say precisely which claims those might be and so no greater specificity is possible at this time.

5. Obviousness: Hydraulic Motors at Each Corner

Above I have concluded that ASCOM has established, by clear and convincing evidence, that the Mi-Jack 850P gantry crane is prior art disclosing and anticipating carousel steering achieved (through a controller) by reversing the drive direction of the wheels and meeting other limitations of the asserted claims. ASCOM recognizes, however, that the Mi-Jack crane includes drive motors at only two of the crane's four corners, whereas some of the asserted claims (8, 13, 15 and 16) describe a motor connected to all four wheels. It asserts, however, that including motors at all four corners of the crane would have been obvious to one skilled in the art. Thus, it argues that such a minor distinction between some of the claims of the '362 patent and the Mi-Jack machine is not enough to render those claims novel or non-obvious.

MTI disputes this, but the bulk of its argument rests on its attempt to reject the Mi-Jack crane as prior art, as discussed above. For example, it argues that because the Mi-Jack machine did not incorporate the carousel steering features until the 2006 GPS steering upgrade, it cannot be the basis for any of the Defendants' obviousness arguments. Since I have rejected that and other arguments that the 850P is not applicable prior art, these arguments fall away. The remainder of MTI's argument on this point is quite limited. Specifically, it argues that Mi-Jack has not identified any other cranes it produced using four-wheel hydraulic drive and notes that Zakula testified that there was no reason to use four-wheel drive.

These limited objections do not overcome the powerful and common-sense argument that using four, instead of two, motors would have been an obvious option to anyone skilled in the art. First, it is notable that nothing in the asserted patent itself even suggests that the use of four motors

was somehow novel or useful. The '362 patent addresses a number of pre-existing problems in prior art steering systems, but four-wheel drive is not one of them. In fact, four-wheel drive had been shown in the Skaalen patent from 1986, which indicates that "each of the wheel assemblies [i.e., all four] is provided with independent hydrostatic drive motors." (ECF No. 152-3 at 4:18-19.) Finally, Zakula's testimony that four wheel drive was "not necessary" is simply a reflection of the market demand. He stated, for example, that his company's cranes usually only "needed" two drive motors, but that if there were an application requiring more traction then four wheel drive could be desirable, and easily achievable. (ECF No 236-1 at 53-54.) Mi-Jack itself had used four-wheel drive in an application using steel wheels, which tended to slip more than wheels with rubber tires. (*Id.* at 54:10-14.) Ultimately, MTI's argument that using four motors was somehow a novel idea is wholly unconvincing.

In sum, I agree with the Defendants that any reasonable jury would find, by clear and convincing evidence, that the Mi-Jack crane anticipates (or renders obvious) the asserted claims 1-3, 6-8, 11-17, and 20 of the '362 patent. Those claims are therefore invalid.

B. Skaalen Patent

The Defendants also argue that the Skaalen patent, No. 4,599,030, anticipates the asserted claims of the '362 and '274 patents. The Skaalen patent describes a "marginal terrain container handler," essentially a rugged vehicle designed to move shipping containers on rugged terrain, e.g., beaches and distressed soil, in extreme environments such as those encountered during amphibious military landings. In this court's decision denying MTI's motion for a preliminary injunction, I noted that Skaalen "discloses carousel steering, and it at least suggests the possibility of achieving carousel position essentially through the means described in the '362 patent," namely, by reversing the drive direction of the wheels.

The Skaalen reference was among those considered by the patent examiner. Accordingly,

although the clear-and-convincing burden remains the same, a court must acknowledge that a "'presumption of validity under 35 U.S.C. § 282 carries with it a presumption that the Examiner did his duty and knew what claims he was allowing.' Therefore, the challenger's 'burden is especially difficult when the prior art was before the PTO examiner during prosecution of the application.'" *Al-Site Corp. v. VSI Int'l, Inc.,* 174 F.3d 1308, 1323 (Fed. Cir. 1999) (citations omitted).

Clearly Skaalen discloses a kind of carousel steering, which the patent describes as "tight radius turning within vehicle length." However, MTI argues that the Skaalen patent does not disclose several of the features described in the asserted claims. I address these arguments below.[2]

1. Controller Configured to Control Wheel Movement

First, MTI argues that Skaalen does not anticipate a controller configured to control movement of the wheels in response to the selection of any given steering mode. Skaalen has a controller, but MTI argues the controller is merely directed toward integrating individual steering motor functions to produce Ackermann steering for that steering mode function. (ECF No. 152-3 at 4:60-68.) Ackermann steering, which dates to the days of horse-drawn carriages, is a solution to the problem posed by the geometrical fact that when a four-wheeled vehicle turns, the radii of the turning wheels are different—that is, the wheels on the outside of the vehicle have a larger arc to negotiate than the wheels on the inside of the circle. Thus, MTI explains, a processor directed to control "Ackermann steering" is only relevant to controlling the movement of the two steerable wheels; it is not a concept or feature that would be relevant to carousel steering, wherein all four wheels are turned to angles to produce a circular motion.

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[2]In many places, MTI's brief argues that "no reasonable juror" could find anticipation based on each of its arguments, but MTI has not moved for summary judgment. Accordingly, the standard it must meet to defeat the Defendants' motion is much lower. It needs merely to show that a reasonable juror would not necessarily agree with the Defendants' anticipation arguments, i.e., that a genuine issue of material fact exists. Thus, in denying the Defendants' motion I am merely concluding that issues of fact remain, not that MTI itself is entitled to judgment at this time.

ASCOM responds that Skaalen clearly teaches "360 degree steering of wheel assembly 16,17,18 and 19" which "offers wheel positioning alternatives and steering options which greatly facilitate container handling." (ECF No. 152-3, 15:21-24.) It also notes that Skaalen explains that "the microprocessor functions as the steering mode selector in that various steering functions displayed at the operator's consol can be electrically selected. . . . Various modes of operation of the 360 degree full traverse / hydraulic drive system is illustrated in FIG. 8." (*Id.* at 5:12-20.) Contrary to MTI's argument, the mere fact that Skaalen refers to "ackerman steering" [sic] does not mean its controller is limited to that sole application. Instead, Skaalen explains:

> Each of the four . . . motors can be controlled independently, individually, or hydraulically integrated to produce typical ackerman steering as required for all modes of steering including conventional front wheel steer, rear wheel steer, oblique steering, crab steering, or circular pivot steering wherein wheels on diagonals are hydraulically integrated and rotated to produce circle steering."

(ECF No. 152-3 at 4:60-69.)

The patent further explains that the motors are "integrated through an electrical feedback steering shaft position sensing circuit which feeds steering shaft positioning information . . . to a micro processor." (*Id.* at 5:1-5.) "The micro processor functions as the steering mode selector in that various steering functions displayed at the operator's console can be electrically selected." (*Id.* at 5:12-14.) Thus, it is clear that the machine disclosed in Skaalen has a controller configured to control the movement of the wheels.

2. Four Wheel Coordinated Steering Mode

Second, MTI argues that Skaalen does not teach a four-wheel coordinated steering mode, as taught by claims 9-10 and 17-18 of the '299 patent. ASCOM concedes that coordinated steering is not explicitly described in the patent, but argues that Figures 8(g) and (h) show how the wheels could be coordinated to be turned with all four wheels. ASCOM also argues that four-wheel coordinated turning would be obvious to one skilled in the art.

I cannot conclude from ASCOM's brief argument that coordinated steering is either anticipated by Skaalen or obvious. It is true that the depictions shown in Figure 8 are not intended to be an exhaustive depiction of every kind of steering that the disclosed crane might possess, but the mere fact that a feature such as four-wheel coordinated steering is not excluded by a patent does not mean that feature is anticipated or obvious. Similarly, the fact that two figures shown in Skaalen could be combined in a way suggestive of four-wheel coordinated steering is not enough, at the summary judgment stage, to surmount the high hurdle ASCOM faces in showing invalidity—particularly when Skaalen was before the examiner.

3. Minimize Wheel Turning

MTI also argues that Skaalen does not disclose a controller configured to minimize the turning of each wheel, one of the key teachings of the asserted claims. As noted earlier, at the preliminary injunction stage I concluded that the Skaalen patent appears to disclose the possibility of minimized wheel turn, i.e., the concept that two of the wheels turn only part of the way around and then reverse drive direction to achieve carousel steering. However, it is impossible at the summary judgment stage to conclude that the patent demonstrates this feature by clear and convincing evidence, especially when the patent examiner was aware of Skaalen. What the patent shows is carousel steering, but the only suggestion that the wheels minimize their turn in the way taught by the asserted claims is found in the diagram of Figure 8(J), showing "tight radius turning within vehicle length." (ECF No. 142-3 at 5.) It is possible to read the figure as suggesting that some of the wheels, shown in carousel mode, have traveled to their turned position by taking the "shortcut" suggested in the asserted claims. But such a reading is based solely on an interpretation of which way the wheels are facing (front or rear) after being turned, and the figure is not completely clear on that point. For example, if the wheels truly turned only the minimum required, then one would expect them to be drawn with positions similar to Figure 8(A) (showing "normal

operation"), except that the wheels would have turned 45 degrees or less. Instead, Figure 8(J) appears to show that the wheels could have turned much more than that. For example, as compared to the "normal operation" wheel shown in 8(A), the lower wheels in 8(J) appear no longer to be facing the same direction but instead are turned backwards, as though they did not turn a mere 45 degrees but instead traversed a much longer journey. (ECF No. 142-3 at 5.) In a footnote to this court's decision denying a preliminary injunction, I noted this fact but found that the wheels could be "amenable to turning in the exact fashion disclosed in the '362 patent." (ECF No. 88 at 8 n.2.) Although they could indeed be amenable to such a function, it is less than clear that the Skaalen patent actually anticipates or teaches that function. After all, Skaalen is silent on the degree of wheel turn and does not disclose that as a feature, much less a novel and useful one. Therefore, at the summary judgment stage it would be impossible to conclude, by clear and convincing evidence, that Skaalen anticipates that feature of the asserted claims.

4. Controller Programmed to Stop/Slow Down Movement and/or Disable Engine Drive Prior to Carousel Mode

Certain claims of the '362 patent teach a controller programmed to "slow down movement of the frame structure before effecting the carousel steering mode." Other claims in the '299 patent teach a controller that disables the engine drive upon selection of carousel mode. Skaalen does not explicitly disclose these features. ASCOM argues that even if that is true, slowing down or stopping movement prior to entering carousel mode would have been obvious. It cites the testimony of the Plaintiff's co-inventor, Jerry Wierzba, who testified that he knew, by virtue of being a developer of gantry cranes, that "if you try to drive a machine that has wheel[s] that are misaligned, it causes inputs into the structure that you don't necessarily want because it affects the machine." (ECF No. 152-2 at 11-14.) In addition, Wierzba testified that the rest of the engineering staff also understood that driving the machine before the wheels were in their proper position would cause damage.

Although Wierzba and his staff may have understood that the machine must be stopped before carousel mode was effectuated, that does not, in and of itself, render the disclosure obvious. The standard is what a reasonable individual skilled in the art would have known, not what the actual inventor himself knew—after all, *he* was the inventor, and so naturally he would have understood the attraction of the very component that he invented. Given that Skaalen was before the patent examiner, and given that obviousness is generally a fact question, I cannot conclude that having a controller programmed to slow down movement or stop engine drive is disclosed or obvious in light of Skaalen or other patents.

5. Controller Configured to Reverse Drive Direction

MTI also argues that claims of both the '362 and '299 patent require that, when carousel steering mode is selected, the motor for one front wheel and one rear wheel reverse drive direction. Reversing drive direction of two wheels is necessary because otherwise the wheels, having turned in the "shortcut" path, would otherwise be heading in the wrong direction, not allowing the crane to rotate in a circle.

ASCOM believes that Skaalen anticipates reverse drive direction because each wheel assembly has an independent hydrostatic drive motor that allows the wheel to be rotated by 360 degrees. But, as with the minimizing of wheel turning discussed above, the fact that the crane disclosed in Skaalen *might* go into reverse drive (and minimize wheel turn) does not mean that feature is necessarily anticipated. As with minimized wheel turn, nowhere does Skaalen mention this feature. Minimized-turn carousel steering requires both the minimized turn as well as reverse drive in two wheels. The fact that the patent discusses *neither* of these features makes it impossible to find, on summary judgment, that the features are anticipated.

6. Controller Configured to Monitor an Operating Parameter

ASCOM also argues that Skaalen anticipates asserted claims of the '299 patent. That patent

discloses only a few limitations in addition to those found in the '362 teachings, including a controller configured to monitor an operating parameter of a crane and the crane's wheel position. Another teaching of the '299 patent is that the controller disables the engine drive before a steering mode is selected. (ECF No. 98-2 at claims 8, 9, 23, 24.) ASCOM argues that Skaalen clearly discloses these features. As addressed above, Skaalen teaches a microprocessor that controls the various modes of steering, which means the controller and electrical feedback system necessarily control wheel movement.

MTI responds that ASCOM is conflating the concept of monitoring wheel position with monitoring an operating parameter. Claims 9-10, 17-18 of the '299 patent require this feature, and the Skaalen patent is silent about it. The '299 patent's claim that the device monitors a "parameter" is quite vague. The specification explains that the controller can monitor a parameter of the crane "such as engine RPMs" (ECF No. 24-9 at 2:47), or speed, oil pressure, coolant temperature, wheel position, etc. (*Id.* at 10:7-10.) ASCOM says that Skaalen teaches a microprocessor that monitors both the wheel position (one parameter) as well as wheel rotation (a second parameter). That is, wheel rotation on an angle—for example, for carousel steering—is one parameter clearly disclosed. In addition, Skaalen discloses other wheel positions where the wheels extend outward or retract inward—i.e., the wheels themselves move outward or inward, not just forward, backward, circular, etc. These positions are parameters that the machine shown in Skaalen monitors *in addition* to the wheel angles required for various steering modes. Thus, ASCOM concludes that Skaalen monitors a parameter.

Given how broad the concept of monitoring "a parameter" is, I conclude Skaalen's teachings suffice to demonstrate that the Skaalen device monitors an operating parameter of a crane. It monitors wheel angle as well as wheel position, and the '299 patent itself describes "wheel position" as one of the "parameters" at issue. (*Id*. at 10:7-10.)

7. Gear Drive Mechanisms

Finally, claims in both the '362 and '274 patent teach a gear drive mechanism for turning the wheels. Skaalen, by contrast, teaches a chain and sprocket rotary drive system. ASCOM argues that, even so, the use of a gear drive mechanism would have been obvious to one of ordinary skill in the art in light of the Zakula patent. Zakula, issued in 2001, describes a steering mechanism for a gantry crane and indicates that the steering may be of any number of types, including gear drive or chain/sprocket drives. (ECF No. 152-5 at 3:41.) Zakula, however, was also before the patent examiner and, as MTI notes, the Mi-Jack company owned the Zakula patent but did *not* use gear drive mechanisms. Although it is certainly conceivable that the use of gear drives would have been obvious to one skilled in the art, ASCOM cannot meet its burden at the summary judgment stage merely by citing another patent and stating it would have been obvious to combine its teachings with Skaalen.

C. Minty Patent

The Minty patent, issued in 1963, describes a "steerable gantry crane" designed for maneuverability and the ability to lift very heavy loads. (ECF No. 152-13.) The crane has "separate motors driving the inner and outer wheels of each truck, which motors may be operated in opposite directions." (*Id.* at 2:5-8.) The Defendants argue that Minty, issued more than 50 years ago, anticipates almost all of the claims of the '362 patent and all claims of the '274 patent. In contrast to their anticipation argument based on the Mi-Jack crane, however, the Defendants' argument that Minty anticipates all asserted claims is somewhat brief.

1. Controller

The main problem MTI identifies is that Minty does not seem to teach the use of a controller. Of course, being a complex gantry crane, parts of the crane are necessarily "controlled" by systems, motors, and the like. But nowhere, MTI argues, does the patent describe a controller

in the sense of a device or piece of equipment that operates the steering system. ASCOM argues, however, that the controller on Minty is the "control board" and "panel board" described in the patent. As the specification discloses, "the operation of the instant invention is extremely simple and can be accomplished with only one operator upon the crane. . . . [who] need only move designated switches or push buttons to effect the various controls desired. By proper operation of the eight truck motors, the gantry crane may be cause[d] to travel and be steered in the proper and desired direction, even to almost a precise degree." (ECF No. 152-13 at 13:16-28.)

There is no doubt that Minty shows a control system whereby the user drives and steers the gantry crane. But presumably every gantry crane ever invented has some kind of user interface by which the user "controls" the machine. As MTI argues, however, that generic sense of "control" does not seem to reflect the kind of "controller" disclosed in the '372 patent. There is nothing in the Minty disclosures, for example, whereby the user could simply press a button marked "carousel steering" (for example) and the crane's controls would *automatically* turn the wheels and motors to the proper direction to effectuate that function. As MTI's expert notes, it is really the user-operator of the Minty crane that places the crane in various steering modes, not a controller. (ECF No. 167-1 at ¶ 47.) To be sure, the user operates the crane with controls, but that appears to carry a different meaning than the term "controller" as it is used in the asserted claims. From this it also follows that there is no controller that is programmed to minimize the turning of the wheels, a point about which Minty is silent. Accordingly, I conclude that ASCOM has not shown by clear and convincing evidence that Minty anticipates the kind of controller taught by the asserted claims, especially a controller that minimizes wheel turn, which is one of the salient teachings of those claims.

2. Controller Configured to Reverse a Drive Direction

The asserted claims describe a controller configured to reverse a drive direction of one front

wheel and a rear wheel in response to the selection of carousel steering mode. As noted above, reversing the drive direction on two wheels is a necessary element of achieving carousel steering by minimizing wheel turn. ASCOM argues that Minty teaches "a reversible drive motor on each truck connected to actuate the outer wheel of the truck, and a reversible drive motor on each truck connected to actuate the inner wheel of the truck." (ECF No. 152-13 at 14:9-10.) Moreover, the patent describes trucks that may be aligned at various angles, which would allow for carousel steering.

I agree with MTI, however, that the mere fact that an invention has a reversible drive motor does not mean that it teaches that reversing the drive on two wheels is a means of obtaining carousel steering and minimizing wheel turn. After all, the novelty isn't in the technology of a reversible drive motor *itself*, it is in the application of that technology whereby two of the wheels on the crane are placed into reverse so as to allow for minimized wheel turn. The asserted claims teach that the invention reverses "a drive direction of the second front wheel and the second rear wheel in response to the selection of carousel steering mode," and that is a very specific application of reverse drive. The presence of reversible drive motors in Minty is not enough, on its own, to anticipate that very particular function.

3. Pinion Drive Gear

Finally, MTI argues that Minty does not anticipate the asserted claims that require a "pinion drive gear" for turning at least one wheel to steer the crane. (ECF No. 98-1 at claims 24, 28, 32 and 35.) ASCOM argues, very briefly, that Minty explains that "there are a number of ways and means for locking each truck in position of angular adjustment with the utilization of reversible worm or spur gear assemblies equipped with magnetic brakes." (ECF No. 152-13 at 9:63-67.) As ASCOM's expert explains, a spur gear *may* be a pinion gear. (ECF No. 155 at 12.6.) But a spur gear may also *not* be a pinion gear, and so the mere fact that Minty (implicitly) accounts for the possibility of

pinion gears is not enough to say that it *anticipates* them. Otherwise, any feature may be "anticipated" simply because a patent did not explicitly exclude it, and that is not what the law of anticipation provides. "[U]nless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102." *Net MoneyIN, Inc. v. VeriSign, Inc.,* 545 F.3d 1359, 1371 (Fed. Cir. 2008).

D. Obviousness of the '441 Patent

The Defendants also argue that the alleged invention of the '441 patent is obvious in light of Skaalen and/or Minty and/or other prior art. Under 35 U.S.C. § 103(a), a patent is invalid "if the differences between the [claimed] subject matter ... and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." A party seeking to invalidate a patent on obviousness grounds must demonstrate "by clear and convincing evidence that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so." *Pfizer, Inc. v. Apotex, Inc.,* 480 F.3d 1348, 1361 (Fed. Cir. 2007). On summary judgment, the evidence must be viewed favorably to the nonmovant, with doubts resolved and reasonable inferences drawn in the nonmovant's favor. *Rockwell Int'l Corp. v. United States,* 147 F.3d 1358, 1366 (Fed. Cir. 1998).

1. Obviousness Arguments

The focus of ASCOM's argument is that controlling proper wheel alignment was well-known in the art at the time of the invention disclosed in the '441 patent. That patent describes a controller configured to control wheel position and "stop movement of the remaining wheels"

when it senses a wheel is out of alignment by a certain number of degrees. (ECF No. 98-4 at 13: 8-16.) ASCOM argues that it was obvious, based on basic design requirements inherent in a four-wheel steering crane, that the wheels must be stopped if a wheel was out of alignment.

Many of ASCOM's arguments on obviousness are conclusory. It does, however, cite a patent to Voelz, which discloses a steering control system that prevents the wheels from turning "unless the wheels are in predetermined orientation" and "maintain[s] proper alignment of the wheels in all angular positions." (ECF No. 152-15 at 50-55.) Voelz, ASCOM states, discloses a system for monitoring wheel position based on photocells, which prevents wheel turn when any of the wheels are out of position. Because Voelz was issued in 1981, the disclosed safety features of the '441 patent would have been obvious to someone two decades later.

But the claim cited by ASCOM appears to relate to the crane's transition between two-wheel and four-wheel steering operations, and not to the invention of a system for monitoring wheel position and then stopping movement if out of alignment. The specification does not highlight the invention disclosed in the '441 patent or anything similar, and neither does it describe a problem in the prior art that Voelz solves with such a feature. Accordingly, it is impossible to draw the conclusion from Voelz' claim 6, on which the Defendants rely, that one of ordinary skill in the art would necessarily find the '441 patent's disclosure of a wheel monitoring system obvious.

The same holds true with respect to ASCOM's other obviousness arguments. It is likely true that one skilled in the art would have understood that stopping the machine when the wheels were out of alignment would, in general, be a useful and possibly predictable feature of a gantry crane. But it does not necessarily follow from that general principle that it would have been obvious to include the specific features described in the '441 patent, which describes (for example) a controller configured such that when at least one wheel has a sensed position a predetermined distance from a programmed position, the controller stops movement of the remaining wheels. (ECF No. 98-4

at 13: 8-16.) There could be other ways of stopping the wheels that do not employ the specific means disclosed in the asserted claim. Accordingly, at this stage I cannot conclude that the Defendants' evidence meets the clear and convincing standard to show that the '441 patent's disclosure of that particular means of managing the misalignment of the crane's wheels was obvious.

2. Objective Factors

ASCOM also argues that MTI has not produced any meaningful evidence of the secondary factors that may be suggestive of non-obviousness. These factors include the failure of others to make the patented invention; long-felt but unsolved needs fulfilled by the patented invention; commercial success of the patented invention; and unexpected results produced by the patented invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *Pfizer, Inc. v. Apotex, Inc.,* 480 F.3d 1348, 1369 (Fed. Cir. 2007). Consideration of these factors is designed to prevent courts from viewing the obviousness question with 20/20 hindsight.

It is often repeated that a strong showing of obviousness cannot be defeated by consideration of these secondary factors. *Leapfrog Enters., Inc., v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007). What's less clear is whether the secondary factors play much of a role when the defendant has *failed* to make a strong showing of obviousness. In Federal Circuit precedent, objective factors are often cast as an opportunity for a patentee to demonstrate that something that otherwise seems obvious is *not* obvious. That is, these factors provide an opportunity to the patentee "to rebut a prima facie case of obviousness based on prior art references." *WMS Gaming Inc. v. International Game Tech.,* 184 F.3d 1339, 1359 (Fed. Cir. 1999). Other cases suggest, however, that secondary factors must *always* be considered—i.e., not merely to rebut a *prima facie* case. "[E]ven panels that have used the 'prima facie' and 'rebuttal' language generally have made clear that a fact finder must consider all evidence of obviousness and nonobviousness before

reaching a determination." *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.,* 676 F.3d 1063, 1077 (Fed. Cir. 2012). As explained below, it appears that there are no significant objective indicia of non-obviousness, and so this analysis is largely surplusage and does not tip the scales much either way. For the sake of completeness, however, I will address the secondary factors to the extent they are argued here.

The issue of secondary factors received substantial treatment at the preliminary injunction stage. In my decision denying the motion for preliminary relief, I noted that MTI had failed to differentiate its invention (particularly, the shortcut method for achieving carousel steering) from carousel steering more generally. (ECF No. 88 at 10.) In short, there was scant nexus between any commercial success MTI's gantry cranes enjoyed and the technology of the asserted claims. In fact, there was no evidence that any customer even understood the patented inventions, much less considered them important. Because MTI had failed to show that its *invention*—rather than its gantry crane—enjoyed commercial success or answered a previously unmet need, I concluded that the objective factors of non-obviousness did not play a significant role in rebutting the apparent obviousness of the invention. *Wyers v. Master Lock Co.,* 616 F.3d 1231, 1246 (Fed. Cir. 2010) ("Wyers relies solely on Master Lock's $20 million in sales of the accused product, and established no direct nexus" to the patented technology itself.")

The Defendants argue that MTI is once again without the ability to distinguish its technology or demonstrate that it made a valuable contribution to the gantry crane market. For example, the customers who testified stated that the features MTI touts were not material to their decision to purchase gantry cranes. Jerry Wierzba, a co-patentee of the asserted claims, proved unable to articulate in any detail how his company's customers reacted to the inventions disclosed in the asserted claims. MTI's response is largely a re-hash of its other arguments on obviousness. That is, rather than relying on how its technology was received (unmet demand, surprising results, market

success, etc.), it reverts to explaining how its technology differed from prior art. For example, it describes how the asserted claims have features that are superior to those suggested by the Minty and Skaalen patents. But these are arguments based on prior art, not secondary factors. Secondary factors are designed to address how the challenged claims actually performed in the marketplace—things that objectively happened—rather than on the more abstract argument describing how one idea might be better than another. I thus conclude that MTI has essentially conceded that there are no secondary factors that materially advance its argument for non-obviousness.

It may be true that the absence of objective factors of non-obviousness will help the Defendants in their overall obviousness challenge, since objective factors are part of the obviousness analysis. Even so, the absence of such factors does not suffice to show that a claim would have been obvious to one skilled in the art. The Plaintiff was granted patents that are presumed valid, and thus it is not their burden to prove non-obviousness. Indeed, many patents describe technology that is never taken to market, and in those cases there would rarely be any evidence of secondary factors. Those patents remain valid despite no evidence of secondary considerations. For present purposes, it is enough to conclude that the absence of material secondary considerations is not enough to get the Defendants over the significant hurdle they face in showing obviousness.

E. Infringement of Claims 15-18, 20-21 and 23-24 of the '441 Patent

The Defendants also argue that, as a matter of law, their products do not infringe certain asserted claims of the '441 patent. Claim 15, and all of its dependent claims, discloses a controller configured to monitor the position of the wheels such that when a wheel of the crane "has a sensed position a predetermined distance from a programmed position," the controller "stops movement of the remaining wheels." (ECF No. 98-4 at 13:4-16.) In other words, if one of the wheels would

get out of alignment for some reason (i.e., it is too far away from its "programmed position,") the other wheels automatically stop.

ASCOM argues that its cranes do not meet this limitation. Instead, in most steering modes, the wheels on its cranes operate in a "master/slave" relationship whereby one wheel is designated the master, and the other three wheels simply move in relationship to that wheel. There is no pre-programmed position that each wheel is supposed to be in, and the controller does not stop movement of the wheels if one wheel is out of position. In carousel steering mode, however, ASCOM admits that its cranes *do* have a pre-programmed position. But, unlike the asserted claims, the crane does not "stop movement of the remaining wheels" if the controller senses misalignment. That is, if one wheel strays from its intended course, the other three wheels continue moving, at least in some respects. ASCOM therefore argues that, as a matter of law, its cranes do not practice this teaching of the asserted claims.

MTI protests that the essence of this non-infringement argument is really based on disputed claim construction, and the time for raising such issues has long passed. Specifically, ASCOM's argument that its cranes do not "stop movement" of the wheels is premised on the fact that its cranes do not stop *angular* or rotational movement of the wheels. Their cranes do, however, have a controller that stops the *drive* movement of the wheels if a gap is perceived between the wheel's intended position and the actual position. The claims asserted here merely state that the controller "stops movement" of the wheels, and thus MTI argues that ASCOM is implicitly attempting to narrow the ordinary meaning of the clause to have it mean the controller "stops angular movement" or "stops rotational movement" of the wheels. MTI argues both that the time for claim construction arguments is passed, and, even so, it would be improper to narrow the plain meaning of the claims.

The Defendants protest that MTI is actually the party asking for an improperly narrowed construction. The plain and ordinary meaning of the term "stops movement" would mean that

wheel movement is stopped—entirely. To say that something has stopped movement would suggest that the thing is at rest. The term "stop" is an absolute term—as ASCOM argues, either something is stopped (completely at rest), or it is not. Thus, if the wheels on the ASCOM crane continue rotating after one of them is sensed to be out of position, they have not "stopped movement." In fact, it appears from the specification that this is at least partly what the MTI patentees had in mind: "[I]f the difference between the actual position and the programmed position exceeds a threshold (e.g., three degrees) for any wheel, the controller 110 stops *turning* the other wheels to their programmed position until the situation is corrected." (ECF No. 98-4 at 9:44-48.)

In short, I agree with the Defendants that since ASCOM's cranes continue "turning" the wheels (rotational movement), the controller has not "stopped" their movement. The Defendants are therefore entitled to summary judgment of non-infringement on these claims.

F. Canadian Transaction

Finally, the Defendants argue that the Patent Act does not extend to sales of their product in Canada. If ASCOM, an Italian company, sold machines to Canada, those sales would not infringe United States patent laws.

MTI does not dispute the general principle that the patent laws apply only to "sales" made in the United States, but it argues that there are facts suggesting that a crane sold to General Motors may have occurred in Michigan, even if the crane ultimately ended up in Canada. Some negotiations occurred between ASCOM and GM's Michigan employees; the purchase order from GM was issued from its Michigan address; and the parties agreed to be governed by the laws of Michigan.

Where a "sale" occurred is not always readily ascertainable. "The standards for determining where a sale may be said to occur do not pinpoint a single, universally applicable fact that determines the answer, and it is not even settled whether a sale can have more than one location.

Places of seeming relevance include a place of inking the legal commitment to buy and sell and a place of delivery." *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.,* 807 F.3d 1283, 1308 (Fed. Cir. 2015) (citations omitted). "[W]hen substantial activities of a sales transaction, including the final formation of a contract for sale encompassing all essential terms as well as the delivery and performance under that sales contract, occur entirely outside the United States, pricing and contracting negotiations in the United States alone do not constitute or transform those extraterritorial activities into a sale within the United States for purposes of § 271(a)." *Halo Elecs., Inc. v. Pulse Elecs., Inc.,* 769 F.3d 1371, 1379 (Fed. Cir. 2014).

Here, substantial activities of the sales transactions at issue, in addition to manufacturing and delivery, occurred outside the United States. The most salient activity pertaining to the sale was the manufacture and delivery of the crane itself. ASCOM, an Italian company, manufactured the crane in Italy and then delivered it to GM's facility in Oshwa, Canada. "Although the place of contracting may be one of several possible locations of a sale to confer personal jurisdiction, we have not deemed a sale to have occurred within the United States for purposes of liability under § 271(a) based solely on negotiation and contracting activities in the United States when the vast majority of activities underlying the sales transaction occurred wholly outside the United States." *Id.* at 1378. The seller's sales activity occurred in Italy, and some of the buyer's activity occurred in Michigan, but the essence of the contract—the production and delivery of a gantry crane—occurred outside United States borders. In *Halo,* the facts were similar:

> For those products that Pulse [the defendant] delivered abroad, all purchase orders were received at Pulse's sales offices abroad. However, Pulse engaged in pricing negotiations in the United States with companies such as Cisco, and Pulse's employees in the United States approved prices that its agents quoted to foreign customers when the quoted prices fell below certain thresholds. Pulse also engaged in other activities in the United States, including meeting regularly with Cisco design engineers, sending product samples to Cisco for pre-approval, attending sales meetings with its customers, and providing post-sale support for its products.

Id. at 1375.

As here, the plaintiff in *Halo* argued that the offending products "were sold and offered for sale within the United States because negotiations and contracting activities occurred within the United States, which resulted in binding contracts that set specific terms for price and quantity." *Id.* at 1377. The Federal Circuit rejected this argument, finding more persuasive the fact that Pulse was a foreign company that delivered the ordered products to companies in other foreign markets. Although Cisco, the American company, was directing sales from the United States, the substance of the transaction was primarily foreign. In reaching this conclusion, the Federal Circuit repeatedly made reference to the "strong policy against extraterritorial liability [that] exists in the patent law," *id.* at 1378, and noted that "[t]he presumption that United States law governs domestically but does not rule the world applies with particular force in patent law." *Id.* at 1380 (quoting *Microsoft Corp. v. AT & T Corp.,* 550 U.S. 437, 454-55 (2007)). Here, as in *Halo*, "the products under discussion here were manufactured, shipped, and delivered to buyers abroad." *Id.* That some of the negotiations occurred in Michigan is not sufficient to overcome the fact that the essence of the transaction was the sale and manufacture of an Italian product to a Canadian facility. Accordingly, given the presumption against extraterritoriality, I conclude that the Defendants are entitled to summary judgment that the sale to General Motors occurred outside the purview of American patent law.

G. The Plaintiff's Motion for Partial Summary Judgment

MTI has filed a motion seeking partial summary judgment of infringement of certain of the asserted claims.

1. Short-Turn Carousel Mode

In response to the Plaintiff's motion, ASCOM argues that several of the accused machines do not even have carousel steering functionality at all, and therefore they cannot infringe the

asserted claims. Specifically, the cranes it sold to the Shelter Island Boatyard, Houston Pilots, and Fred Wahl Marine Constructions do not have carousel mode, and thus they lack a user interface capable of placing the apparatus in a carousel steering mode, as required by several asserted claims.

MTI responds that it does not matter what kind of functionality the cranes have *now*, since these cranes possessed the requisite carousel steering at the time they were *sold*. Patent protection does not extend only to products actually implemented or delivered, but also to sales: "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent." 35 U.S.C.A. § 271(a); *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Contractors USA, Inc.,* 617 F.3d 1296, 1312 (Fed. Cir. 2010) ("On remand, Transocean may argue that the unmodified design . . . was the subject of the Maersk USA/Statoil contract and that therefore there is infringement of the asserted claims based on both a sale and offer to sell.") Thus, even if it is true that some of the Defendant's machines do not currently possess carousel steering capability, that does not undo the fact that they offered to sell, or sold, cranes that infringed MTI's patents. "An offer for sale, whether made before or after a patent is applied for, or after it is granted, requires no more than a commercial offer for sale. Both sections invoke the traditional contractual analysis. Therefore, we similarly define § 271(a)'s 'offer to sell' liability according to the norms of traditional contractual analysis." *Rotec Indus., Inc. v. Mitsubishi Corp.,* 215 F.3d 1246, 1254-55 (Fed. Cir. 2000). Here, ASCOM's own witness testified that the machines in question, including those sold to Shelter Island and Houston Pilots, possessed short-turn carousel steering mode. (ECF No. 152-24 at 30:3-6; 57:23-58:5; 58:24-59:4.)

The same holds true for the cranes ASCOM sold to Diamond Services. It alleges that although at one point these cranes possessed software allowing them to use the short-turn carousel turning function, ASCOM later disabled that function. Thus, at some point ASCOM had made

cranes that infringed, in violation of § 271(a). ASCOM also argues that the cranes it sold to Diamond Services lacked the reversal valves necessary to achieve carousel steering. Yet, as MTI notes, nowhere in the asserted claims is there a teaching about reversal valves. ASCOM thus appears to be attempting to differentiate its machines from a preferred embodiment rather than the language used in the asserted claims. In sum, the fact that the cranes ASCOM cites do not presently have carousel steering capabilities does not mean they were not made or offered for sale as infringing machines.

2. Controller

a. "In response to . . ."

All of the independent claims asserted recite that the controller controls movement of the wheels "in response to placing the apparatus in the carousel steering mode," while others are moved "in response to a selected steering mode." (*See, e.g.,* ECF No. 98-1, 11:20-21.)

ASCOM argues that its controllers do not operate in that fashion. Specifically, the operator of an ASCOM machine must proceed through a number of steps, including turning the selector knob to the correct starting position, waiting until the wheels are properly aligned, pressing the START button, etc. Then, if the operator wants to use carousel steering mode, he turns the selector knob to that configuration. At that point, according to ASCOM, nothing happens. The steering mode is selected, but the wheels do not start turning. Instead, the operator needs to complete an additional step, which is to press the Ignition/Horn or START button. It is only then that the controller will direct the machine to carousel steering mode. ASCOM thus argues that because nothing happens when a given steering mode is selected, the crane's wheels do not move "in response" to placing the apparatus in a given steering mode. In ASCOM's view, its cranes move "in response" to pressing the START button, not to selecting a steering mode.

For ASCOM to be correct, this court would need to interpret the claim language "in response

to" as meaning "in *immediate or direct* response to." The claims do not bear that construction, however, and ASCOM has not cited any part of the patents in suit to suggest that the claim terms should be narrowed in that fashion. Clearly, one thing can "respond" to another without the response being immediate. Here, it is clear that ASCOM's machines "respond" to being placed in a given steering mode, even though placement in that mode is only one of many steps, and even though it is the START button that finally gets them moving. The user selects the steering mode and then presses START to get the machine to respond accordingly. That suffices to conclude that the machines turn the wheels "in response to" the chosen steering mode being selected.

This remains true regardless of the nature of the Plaintiffs' experts' testimony, with which ASCOM takes issue. For example, ASCOM says that Thomas Labus erroneously believed that the accused devices automatically began moving their wheels "in response" to the chosen steering mode being selected. It also argues that Richard Hooper, who examined some of ASCOM's source code, failed to establish that the machines were programmed to initiate wheel movement in response to the steering mode being selected. Given that "in response to" does not have the narrow, "automatic" meaning to which ASCOM ascribes the phrase, expert testimony is not required to make such a connection.

b. "Disable an engine drive . . . upon selection of a carousel steering mode"

Claims 23 and 24 of the '299 patent teach a "controller" configured "to disable an engine drive connected to the crane upon selection of a carousel steering mode until the wheels are in the programmed position for the carousel mode." (ECF No. 24-9.) ASCOM first argues that disabling an engine drive means that there is a physical disabling of an engine component. The controllers on ASCOM's machines do not "disable" anything in a physical sense; that is, they do not disengage the clutch or take any mechanical action with respect to the engine itself. Accordingly, ASCOM argues they cannot infringe.

But once again ASCOM is attempting to read a limitation into the claims that isn't there. "Disable" is a generically broad term. In common parlance, someone who is "disabled" is simply someone who has significant physical limitations. These limitations could be due to injury, age, disease, or any number of reasons. The term thus describes the person's limitations—the result, or effect— rather than the cause of those limitations. As applied here, that means all that is relevant is that the engine is "disabled"—inoperative—until the wheels have reached their proper position. The claim language does not specify *how* that is to be accomplished, whether through some kind of physical, mechanical process or otherwise. Accordingly, I do not construe "disable" as requiring some sort of physical effect on the engine.

ASCOM also argues that even if that is true, its controllers do not disable the engine drive "upon selection of a carousel steering mode," as the claims recite. ASCOM points to sections of its manual that warn users that "steering and travelling manoeuvres can be carried out simultaneously" and, "before travel start, wait until all the wheels have come to a complete stop." (ECF No. 163-13 at 19-20.) These warnings demonstrate that the ASCOM machines do not *automatically* disable the engine drive when a steering mode is selected; if they did, there would be no need to warn the user to make sure the wheels were in a stopped position. In addition, although some ASCOM employees testified that the machine would automatically stop if the user switched into carousel mode while driving, they did not know if that was due to the machine's controller or not. In other words, the employees could not say for certain whether automatic stopping was a function of the ASCOM controllers (as recited in the claims) or some other mechanism.

But the Plaintiff also notes that ASCOM controllers are programmed to stop the engine drive whenever there is more than a 3-degree difference between the actual position and the programmed position of the wheels. When a user selects carousel steering mode, its wheels will not be in carousel position, and so presumably they would be more than 3 degrees out of the proper angle for

that position. At that point, the controller would automatically disable the engine drive. This means, according to the Plaintiff's experts, that the controller disables the engine drive upon the user's selection of carousel steering mode. (ECF No. 211-1 at ¶ 267.) It is true that the ASCOM machines have this functionality, but even if the engine drive is stopped by the machine, that would not show that the controller disabled the engine drive "upon selection of a carousel steering mode," as claim 23 recites. Instead, disabling of the drive in that instance would be a function of the wheel position, not the "selection" of any steering mode. In other words, the claims appear to recite that disabling the engine drive is a function inherent to the carousel steering mode selection, while ASCOM's machines have a more general function that stops movement whenever the programmed position differs from the actual wheel position by more than 3 degrees. I am satisfied that a genuine factual dispute exists as to whether ASCOM's controllers "disable an engine drive connected to the crane upon selection of a carousel steering mode until the wheels are in the programmed position for the carousel mode." For the reasons given above, the Plaintiff has not established that no reasonable jury could conclude that ASCOM's machines do not infringe claim 23.

c. "Slow down movement of the frame structure before effecting the carousel steering mode"

Claims 6, 11 and 20 of the '362 patent, as well as claim 27 of the '441 patent, recite that the controller is programmed to slow down movement of the frame structure before effecting the carousel steering mode. (ECF No. 24-1.) As above, ASCOM argues that there is no evidence that its machines automatically slow down movement of the crane as a function of any controller programming. As noted earlier, its manuals suggest that it is up to the user to slow down and stop the machine before entering carousel mode: the first step in the multi-step process is to "completely stop machine travel" and *then* to select the chosen steering mode. (ECF No. 163-13 at 19-20.) At a minimum, this suggests that stopping and/or slowing down the machine is not a function of the ASCOM controller. Similarly, the fact that ASCOM machines might have a function that slows and

stops the drive when the rotation is more than three degrees out of the programmed alignment does not necessarily mean that the controller slows down movement of the frame structure as a function of selecting carousel steering mode. For the same reasons set forth above, I conclude that a genuine factual dispute precludes entry of summary judgment as to infringement of these claims.

III. Conclusion

For the reasons given above, the Defendants' motion for summary judgment is granted in part and denied in part. The motion to file a reply to additional facts is denied.[3] The Plaintiff's motion for partial summary judgment is denied in part and granted in part. The clerk will set the matter on the calendar for a telephonic scheduling conference.

SO ORDERED this 30th day of September, 2016.

/s William C. Griesbach
William C. Griesbach, Chief Judge
United States District Court

[3]The court did not consider any statements of fact as "unrefuted statements of material fact," and so no reply is deemed necessary.